E1 – TECHNOLOGY-BASED ASSESSMENT OF 21ST CENTURY REQUIRED SKILLS

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Symposium Presentations

Computer-based assessment of word reading skills
Andrea Magyar, Katalin Szili
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Assessing the development of technological literacy in early education
Zsuzsa Pluhár
Faculty of Informatics, Eötvös Loránd University

Gyöngyvér Molnár
Institute of Education, University of Szeged

Development of dynamic problem solving from grade 3 to 9
Gyöngyvér Molnár
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Assessing collaborative problem solving online: Experiences of a pilot study
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SYMPOSIUM ABSTRACT

The undeniable changes of global economy, as well as social trends and the rapid spread of infocommunicational tools demand serious reforms on the every educational level. In our new, information-age society, a potentially productive labour force requires different skills compared to the last century (*Kozma*, 2011; *Binkley*, *Erstad*, *Herman*, *Raizen*, *Ripley*, *Miller-Ricci*, and *Rumble*, 2012). Students for instance have to acquire a high level of technology literacy to be successful or become experts of solving complex, unfamiliar problems both individually and collaboratively. The relevant 21st century skills are necessary to be developed in educational contexts and their development should be permanently monitored with valid and reliable assessment tools. Technology offers many advantages (e.g. dynamically changing items, audiovisual elements, chat function, and immediate feedback) which can contribute to more precise data administration and more enjoyable test taking for digital natives (*Prensky*, 2001) compared to paper-pencil-based tests. Computer-based assessment means an ideal testing solution for every age group. However, we have only limited empirical data on young (1st to 4th grade) childrens' technology-based test taking behaviour (e.g. *Csapó*, *Molnár* and *Nagy*, 2014).

The aim of this symposium is to prove empirically that the advantages of technology-based assessment methods can be effectively applied for examining 21st century required skills in every age group.

The four studies of the symposium were all carried out via the eDia platform (Electronic Diagnostic Assessment System). The first paper investigates the data of a paper-based word reading test adaptation taken by 2nd, 4th and 6th grade students. The second study examines developmental tendencies of 1st to 4th grade pupils' technology literacy. The third research diagnoses the development of 3rd to 9th grade students' dynamic problem solving skills, while the last paper measures the problem solving competence of adults in a collaborative environment.

All of the four assessment tools applied in the studies proved to assess the target constructs on acceptable levels of reliability. Participants in every age group manipulated the computer-based tasks easily, they had no difficulties in managing with the modern test contexts. Our results provide evidence that independent of the age of the sample, building upon the advantages of new generation assessment tools, we are ready to effectively investigate complex 21st century required skills.